

IN THE CLAIMS

Please cancel the existing pending claims including 39-42, 45-52 and 55-69 without prejudice or disclaimer of any subject matter in those claims and substitute for them the following new claims 70-85.

70(New). A propellant composition comprising a reduced energy binder, an oxidizer, and a fuel wherein

(a) said reduced energy binder includes a high molecular weight polyester polyol binder polymer including an amount of poly(tetramethylene adipate) having a molecular weight (Mw_n) above 4000 (uncured) and an amount of one or more energetic plasticizers wherein the plasticizer to polymer ratio is less than 1.6:1;

(b) said oxidizer consists of a material selected from the group consisting of ammonium perchlorate and a mixture of ammonium perchlorate and sodium nitrate, and

(c) said fuel is aluminum.

71(New). A propellant composition as in claim 70 wherein said reduced energy binder further comprises an amount of inert plasticizer material.

72(New). A propellant composition as in claim 71 wherein said inert plasticizer is triacetin.

73(New). A reduced energy binder as in claim 70 wherein the one or more energetic plasticizers are selected from the group consisting of nitrate esters of the group consisting of n-butyl-2-nitratoethyl nitramine; trimethylolethane trinitrate;

triethyleneglycol dinitrate; butanetriol trinitrate; nitroglycerin and combinations thereof.

74(New). A reduced energy binder as in claim 71 wherein the one or more energetic plasticizers are selected from the group consisting of nitrate esters of the group consisting of n-butyl-2-nitratoethyl nitramine; trimethylolethane trinitrate; triethyleneglycol dinitrate; butanetriol trinitrate; nitroglycerin and combinations thereof.

75(New). A reduced energy binder as in claim 72 wherein the one or more energetic plasticizers are selected from the group consisting of nitrate esters of the group consisting of n-butyl-2-nitratoethyl nitramine; trimethylolethane trinitrate; triethyleneglycol dinitrate; butanetriol trinitrate; nitroglycerin and combinations thereof.

76(New). A reduced energy binder as in claim 73 wherein the plasticizer is selected from the group consisting of nitroglycerin, n-butyl-2-nitratoethyl nitramine, trimethylolethane trinitrate and combinations thereof.

77(New). A reduced energy binder as in claim 74 wherein the plasticizer is selected from the group consisting of nitroglycerin, n-butyl-2-nitratoethyl nitramine, trimethylolethane trinitrate and combinations thereof.

78(New). A reduced energy binder as in claim 75 wherein the plasticizer is selected from the group consisting of nitroglycerin, n-butyl-2-nitratoethyl nitramine, trimethylolethane trinitrate and combinations thereof.

79(New). A propellant composition as in claim 78 wherein the plasticizer is trimethylolethane trinitrate.

80(New). A propellant composition as in claim 70 wherein the poly (tetramethylene adipate) has a molecular weight MW_n above 6,000.

81(New). An improved high solid propellant composition comprising by weight:

- 41
- (a) about 10% cured poly(tetramethylene adipate) having a molecular weight $MW_n \geq 6000$ (uncured) cured using an isocyanate curing agent;
 - (b) about 11% nitroglycerin plasticizer;
 - (c) about 2.5% triacetin plasticizer;
 - (d) about 22% aluminum; and
 - (e) about 53% ammonium perchlorate oxidizer.

82(New). An improved high solids propellant composition comprising by weight:

- (a) about 7% cured poly(tetramethylene adipate) having a molecular weight, $MW_n \geq 6000$ (uncured) cured using an isocyanate curing agent;
- (b) about 6.5% n-butyl-2-nitratoethyl nitramine;
- (c) about 1.4% triacetin;
- (d) about 22% aluminum;
- (e) about 60% ammonium perchlorate; and
- (f) about 2% dicyandiamide.

83(New). An improved high solids propellant composition comprising by weight:

- (a) about 11% cured poly(tetramethylene adipate) cured from a tetramethylene adipate prepolymer, MW_n about 6,000 (uncured) using an isocyanate curing agent;
- (b) about 12% plasticizer selected from the group consisting of nitroglycerin and trimethylolethane trinitrate and combinations thereof;
- (c) about 22% aluminum; and
- (d) about 53% ammonium perchlorate.

41 84(New). An improved high solids propellant composition comprising by weight:

- (a) about 11.3% cured poly (tetramethylene adipate) cured from a tetramethylene adipate prepolymer, MW_n about 6,200 (uncured) using an isocyanate curing agent;
- (b) about 12.2% nitroglycerin plasticizer;
- (c) about 22% (30 μ) aluminum; and
- (d) about 53% (200 μ) ammonium perchlorate oxidizer.

85(New). The propellant composition of claim 83 wherein (d) comprises about 30% ammonium perchlorate and about 22% sodium nitrate.
